CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 98 – 105
NPDES PERMIT NO. CA0038369

AMENDING WASTE DISCHARGE REQUIREMENTS FOR:

SOUTH BAYSIDE SYSTEM AUTHORITY
REDWOOD CITY, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board, finds that:

1. On July 21, 1993, the Board adopted waste discharge requirements for the South Bayside System Authority (SBSA) (hereinafter called the Discharger), to discharge wastewater to the waters of the State and the United States through a deep water outfall under the National Pollutant Discharge Elimination System (NPDES) in Order No. 93-066.

2. The Discharger presently discharges an average dry weather (ADWF) flow of 18 million gallons per day (mgd) from its treatment plant which has a current dry weather design capacity of 24 mgd. On August 20, 1997, the Board amended the SBDA permit under Order 97-098 to increase the ADWF to 29 mgd under a phased program.

3. The SBSA plant treats domestic and industrial wastewater from Redwood City, West Bay Sanitary District, San Carlos, and the City of Belmont under a joint powers agreement. Advanced secondary treatment facilities consist of primary clarifiers, fixed film reactors, aeration tanks, final clarifiers, dual media filters, and chlorination and dechlorination. The treated wastewater is discharged into the deep water channel of lower San Francisco Bay, a water of the State and United States, at a point approximately 2.5 miles southerly from the San Mateo- Hayward Bridge through a submerged diffuser about 6800 feet offshore at a depth of 50 feet below mean lower low water (Latitude 37 deg., 33 min., 48 sec.; longitude 122 deg., 12 min., 55 sec.).The outfall is designed to provide an initial dilution of approximately 40:1 while effluent limits are calculated based on the more limited 10:1 initial dilution allowed by the Basin Plan.

4. Table 4-2 and its footnotes in the Basin Plan allows fecal coliform limitations to be substituted for total coliform limitations provided that the discharger demonstrates that there is no unacceptable adverse impact on the the beneficial uses of the receiving waters. Previously, several other dischargers including the City and County of San Francisco, Central Contra Costa Sanitary District, East Bay Dischargers Authority, East Bay Municipal Utility District, and Central Marin Sanitation Agency have conducted such studies, documented the absence of discernible impact on receiving waters. Those dischargers where the most restrictive beneficial use was water contact recreation (REC-1) were issued permit amendments allowing operation with fecal coliform effluent limitations of a log mean 200 MPN/100 mL and 90th percentile of 400 MPN/100 mL. Those dischargers where the most restrictive beneficial use was limited water contact recreation were issued permit amendments allowing operation with fecal coliform effluent limitations of a log mean 500 MPN/100mL and 90th percentile of 1100 MPN/100 mL, as defined in an October 24, 1990 memorandum from the California Department of Health Services (DHS) to the SWRCB Executive Officer.

5. In August 1996, the Discharger initiated a study to measure the effect of reduced chlorine residual on fecal coliform numbers in the effluent and receiving waters. The Discharger submitted to the Board its report entitled, *Chlorination Reduction Evaluation and Recommendations for Modified Effluent Coliform Limitations*, dated January 1998. In all cases at the off-shore stations, receiving water fecal coliform levels remained below the limited water contact objective of 500 MPN/100 mL. With the exception of a few samples during

clearly wet weather influenced periods in January and February 1997, receiving water fecal coliform levels were also well below the most restrictive 200 MPN/100 mL water contact objective (REC-1). During the predominately dry season months, while the plant was discharging effluent fecal coliform concentrations near the 500 MPN/100 mL target level, receiving water concentrations were below 8 MPN/100 mL, with most values at or below the 2 MPN/100 mL detection limit. Concurrent day effluent and receiving water monitoring documented that the objective remained fully protected when the plant discharged daily fecal coliform concentrations as high as 16,000 MPN/100 mL. The data analysis showed that there was no discernible relationship between WQCP effluent fecal coliform levels and off-shore fecal coliform levels. Correlation coefficients were highly insignificant, ranging from 0.001-0.02, with the correlation having a negative slope. As expected based on prior studies, concentrations were elevated during wet weather periods at the off-shore stations including the reference station.

6. There is limited public access to the shoreline in the vicinity of the SBSA outfall. Much of the area is also part of a protected wildlife refuge. The nearest historic shellfish harvesting area is two miles northwest of the outfall at the Foster City beds. Fecal coliform monitoring conducted by the City of San Mateo during the SBSA study showed no relationship between either San Mateo's or SBSA's effluent fecal coliform concentrations and shoreline concentrations. Correlation coefficients were insignificant ranging from 0.007 to 0.3. In the two areas of potential (historic) shellfish harvesting along the south Foster City shoreline the five sample median 14 MPN/100 mL fecal coliform shellfish harvesting objective was only met on two occasions and as noted above, levels were unrelated to effluent concentrations. The 1990 Foster City Lagoon Management Plan also noted the large presence of birds in this area and indicated that they may be the greatest "point source" of coliforms in the vicinity.

7. The discharger presented a statistical evaluation of the data and a discussion of the uncertainty inherent in the MPN methodology. In prior actions to substitute fecal for total coliform limits, the Board has chosen to adopt the Basin Plan or 1990 DHS recommended water quality objectives directly as effluent limits, without consideration of dilution. For deepwater dischargers with water contact recreation beneficial uses, this has meant a five day log mean fecal coliform effluent limit of 500 MPN/100ml and a 90th percentile limit of 1100 MPN/100mL.

8. The discharger has requested a daily maximum limit of 2900 MPN/100 mL in lieu of a 90th percentile 1100 MPN/100 mL limit, citing that it is statistically consistent with the 500 MPN/100 mL mean limit and simpler to use for compliance determination. Past Board practice for total coliform limits has been to set daily maximum limits at a factor of at least 10 times higher than the five or seven day median limits. Board staff have reviewed the data and statistical analysis and believes that this is a broader issue requiring additional information, analysis, and public involvement that is best addressed through the Basin Plan amendment process. The permit includes the DHS recommended limited water contact recreation objectives directly as effluent limits. The Board will consider reopening this permit to include alternative log mean and/or daily maximum effluent limits following a review of the water quality and technical basis for the Basin Plan's receiving water bacteriological objectives and methodology for translating them into effluent limits.

9. Modification of the coliform effluent limit from a total coliform to a fecal coliform basis allows for reduced usage of chlorine, which in turn reduces the discharge of chlorinated organic by-products (chlorinated organics such as trihalomethanes), which are potentially harmful to the Bay and its biota. Associated risks to the public from the production, transportation, storage, and handling of chlorination chemicals will also be reduced.

10. The above mentioned report provides new information not available at the time the permit was issued which justifies application of a different coliform limit. Therefore, this revised effluent limit does not violate the anti-backsliding provision of sections 402(o)(1)-(3) and 303(d)(4) of the Clean Water Act. The revised effluent limit will not result in any

decrease in water quality and therefore it is consistent with the State Board Resolution 68-16 (Anti degradation Policy) and with the Federal Anti degradation Rule (40 CFR 131.12).

11. The amendment of an NPDES permit is exempt from the provisions of Chapter 3 (commencing with Section 21100 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 13389 of the Water Code.

12. The Discharger and interested agencies and persons have been notified of the Board's intent to amend the requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.

13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that:

A. Section B.3. under "EFFLUENT LIMITATIONS" of Order No. 93-066 shall be amended to read as follows:

Fecal Coliform Bacteria:

The treated wastewater, at some place in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

The five day log mean fecal coliform density shall not exceed 500 MPN/100 mL, and the 90th percentile value of the last ten values shall not exceed 1100 MPN/100 mL.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 21, 1998.

LORETTA K. BARSAMIAN
Executive Officer